

REMARKS

The applicants cancel claim 2, and amend claims 1, 3, and 5. Claims 1, 3-14 are now pending in the application. The limitations of claim 2 have been added to claim 1 and, accordingly, claim 2 has been canceled. As a result of canceling claim 2, claims 3 and 5 have been amended to depend from claim 1. In claim 3, the word "of" has been added between the words "at the time" and "the switch operation" to correct an obvious typographical error. These amendments find support in the originally filed claims 1-14, and thus no new matter is introduced. Further, these amendments do not raise any new issues that would require further consideration or a new search. Favorable reconsideration of this application is respectfully requested in light of the above amendments and the following detailed discussion.

Claim Rejections – 35 U.S.C. § 103

1. The Examiner has rejected claims 1-3, 5-14 under 35 U.S.C. 103(a) as being unpatentable over Chan et al. (U.S. Patent No. 6,572,241, hereinafter Chan) in view of Chapman et al. (U.S. Patent No. 5,984,494, hereinafter Chapman). The Examiner asserts that:

Chan ('241) discloses a color wash light having:

Regarding claim 1, a plurality of color light sources (24) for emitting lights of at least two different color (see fig. 5); a control unit (16) for controlling the plurality of color light sources (52,54,56); a light mixing means (see abstract) for mixing the lights emitted from the

plurality of color light sources (52,54,56) to produce an illumination light; and wherein the vcolor (sic) illumination device (16) has a first functional mode in which the value of the variable (sic) determines a color of the illumination (col. 3, lines 44-67).

Regarding claim 8, the light mixing means includes a first light diffusing member (29) and a second light diffusing member (28) interposed between the first light diffusing member (29) and the plurality of color light sources (see fig. 2,16), the second light diffusing member having a light transmissive property.

Regarding claim 9, the first light diffusing member (29) includes a cover (27) having a light transmissive property.

Regarding claim 10, a color illumination device (2) for producing light of various colors (52,54,56), including a plurality of color light sources (4,6,8) for emitting lights of a least two different colors (R,G,B); a control unit (16) for controlling the plurality of color light sources (52,54,56) a light mixing means (see abstract) for mixing the lights emitted from the plurality of color light sources (4,6,8/52,54,56) to produce an illumination light; and a control (14) operable by a user, wherein the color illumination device has at least two functional modes and a function of the control is defined for each functional mode (col. 3, lines 44-67),

Chan ('241) does not disclose a control operable to increase or decrease a value of a value of a variable, and a switch.

Chapman ('494) discloses a light shield for an illumination system having:

Regarding claims 1 and 10, a first functional mode (30) and a control (24) operable to

increase or decrease a value of a value of a variable, and wherein the color illumination device further comprises a switch (44) operable to select one of the at least two functional modes (30).

Regarding claim 2, the color illumination device (100) has a second functional mode (44) in which the color of the illumination light is changed periodically in a predetermined pattern and the value of the variable (24) determines a cycle of the periodic light color change, and wherein the color illumination device (100) further includes a switch or controller (44) operable to select one of the functional modes of the color illumination device (100).

Regarding claim 3, wherein when the functional mode is changed from the second functional mode (26) to the first functional mode (24) by an operation of the switch (44), the illumination light color effected in the second functional mode (26) at the time of the switch (44) operation for the functional mode change is maintained in the first functional mode (24) until the control is operated a new after the functional mode change.

Regarding claim 5, the color illumination device further having a third functional mode (30) which is different from the first and second functional modes, wherein the switch includes two different states associated with the first and second functional modes, respectively and wherein in a case that the state of the switch (44) is changed when the color illumination device is in the first functional mode (30) and returned to an original state within a predetermined time period, the color illumination device enters the third functional mode (30).

Regarding claim 6, the third functional mode (30), the color illumination device repeatedly turns on and off at a predetermined cycle, and the value of the variable determines a duration time of the turning on of the color illumination device (col. 5, lines 55-2).

Regarding claim 7, the plurality of color light sources include a red LED (32,28) set having a series-connected plurality of red LEDs, a green LED set having a series-connected plurality of green LEDs, and a blue LED set having a series-connected plurality of blue LEDs, and wherein the control unit (22) includes a first, second and third switching elements each connected in series to an associated one of the red, green and blue LED sets, and a CPU for controlling the first, second and third switching elements (col5, lines 57-62).

Regarding claim 11, the control is adapted to change a value of a variable (24), and the value of the variable (24) is converted in an operation parameter defined for each of the functional modes.

Regarding claim 12, the at least two functional modes (30) comprise a first functional mode in which the value of the variable is converted into a color of the illumination light (2).

Regarding claim 13, the at least two functional modes (30) comprise a second functional mode in which the color of the illumination light is changed periodically in a predetermined pattern, and the value of the variable (24) is converted into a cycle of the periodic light color change.

Regarding claim 14, the switch (44) is adapted to provide the control unit (16) with a signal for indicating that the switch (44) is operated, and in response to the signal from the switch (44), the control unit (22) causes a current functional mode to switch to a next functional mode in a predetermined order of the functional modes (see figs. 4C, 5-21).

It is asserted that it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the color wash light of Chan ('241) with the control operable to increase or decrease a value of a value of a variable, and a switch disclosed by Chapman ('494) for the benefit and advantage to provide a modular light source particularly suited for use as aircraft landing lights, mobile land vehicle headlights, indoor or outdoor area illumination, and for use in like devices, because a dual spectrum illumination system is comprised of two independent modular sources of illumination. Upon activation by an operator or user, the selected light source provides a high intensity beam of visible light.

The applicants, however, respectfully submit that claim 1, as amended, does not function in the manner of Chan, Chapman, or a combination of Chan and Chapman. Instead, claim 1 defines a color illumination device having first and second functional modes, where in the first functional mode the value of the variable determines a color of the illumination light (and hence the color of the illumination light does not vary automatically), while in the second functional mode the color of the illuminating light is changed periodically in a predetermined pattern and the value of the variable determines the cycle of the periodic light color change. Thus, in the first functional mode, the color of illuminating light can be changed manually by operating the control, and in the second functional mode the color of illuminating light changes automatically in the predetermined pattern and with the cycle selectable by operating the control. It is the applicants' position that neither Chan, Chapman, nor a combination of Chan and Chapman

discloses such features. Furthermore, the applicants can find no suggestion or motivation within either Chan or Chapman to combine their respective inventions.

In addition, the Examiner concedes that, "Chan does not disclose a control operable to increase or decrease a value of a variable, and a switch," which claim 1 requires. The applicants agree with this concession.

As to claim 2, the limitations of which are now included in amended claim 1, the Examiner asserts that the above features (i.e., the color of the illuminating light is changed periodically in a predetermined pattern and the value of the variable determines the cycle of the periodic light color change) are disclosed in Chapman. The applicants, however, find that Chapman teaches a Dual Spectrum Illumination System (DSIS) comprising two independent emitters of electro-magnetic radiation. Specifically, a halogen bulb (18) provides a high intensity visible beam of light, while LEDs (28, 32) provide a light of another spectrum such as invisible infrared light (see, for example, column 1, line 55 to column 4, line 13). A selection switch 44 is used to select one of OFF, ILUMINATION 1 (halogen lamp), and ILUMINATION 2 (LEDs) (see, for example, column 3, lines 54-56 and column 4, lines 10-21).

As so described, the system of Chapman provides only two spectra of light and in each of the two light emitting modes (i.e., ILUMINATION 1 and 2), the spectrum or "color" of light emitted from the system is fixed. This is quite different from the first or second functional mode of the subject invention, which allow for selecting various colors.

The applicants further find that Chapman discloses, "The variable resistors 24 control the pulse length and duty cycle of the timer" (column 4, lines 44-45). It is the applicants' position

that this could change the period of flashing LEDs but cannot change the color of light emitted from the LEDs.

Further, it appears to the applicants that Chan may disclose a lighting system comprising a plurality of different color light sources (4, 6, 8) and a rotary knob (14) for supplying control signals to supply power to the light sources in desired proportions so that desired colors may be obtained (column 2, lines 1-24). However, after thoroughly studying the Chapman reference, the applicants can find nowhere in Chapman where Chapman discloses or suggests the shortcoming in Chan; that is, the second functional mode for automatically changing the color of illumination light in a predetermined pattern and controlling the cycle of color change by using the control (knob 14).

With regard to the Examiner's rejection of independent claim 10 and dependent claims 11-14, which depend either directly or indirectly from claim 10, based on Chan, the applicants respectfully submit that Chan does not disclose the important features of claim 10. The applicants find that Chan teaches a color illumination device able to emit light of a desired color. However, Chan fails to disclose or indicate the two functional modes that are required by claim 10, where the function of the user-operable control is defined for each functional mode. On the contrary, the system of Chan has only one functional mode and the rotary knob 14, which may correspond to the user-operable control of the claim 10, but the knob 14 is assigned only one function, i.e., selection of the color of the illuminating light. Thus, Chan fails to teach or suggest

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at least the above-noted features of claim 10. Therefore, the invention defined by claims 10-14 are not taught or suggested by Chan.

The applicants submit that claim 10, along with its dependent claims 11-14, are patentably distinct from Chan and that claims 10-14 should be allowed over Chan. Favorable reconsideration of claims 10-14 is respectfully requested.

Therefore, claims 1-3, 5-14 of the present application are patentable over Chan, and Chan further in view of Chapman, as the inventions defined thereby are not suggested within either Chan or Chapman, nor is there any suggestion to modify or combine these references' teachings in order to teach or suggest the claimed limitations, as required by 35 U.S.C. § 103.

Consequently, the applicant respectfully submits that claims 1-3, 5-14 of the present application are patentable over Chan, and Chan further in view of Chapman, and that claims 1-3, 5-14 should be allowed over Chan and Chapman. Accordingly, favorable reconsideration of claims 1-3, 5-14 is respectfully requested.

2. The Examiner has rejected claim 4 under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Chapman as applied to claim 3 above, and further in view of Turnbull et al, (U.S. Patent No. 6,132,072, hereinafter Turnbull). The Examiner asserts that:

Chan ('241) in view of Chapman ('494) disclose the claimed invention except for a detector.

However, Turnbull ('072) discloses an LED assembly having:

Regarding claim 4, the color illumination device (10) wherein the control unit (22)

includes a memory for storing the color of the illumination light being produced; and a detector (U1) for detecting an operation of the control (22).

The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the detector of Turnbull ('072) for the color wash light of Chan ('241) in view of of Chapman ('494) to provide a lighting assembly having a detector, since this type of lamp emits a highly saturated yellow light which makes detection and or identification of certain objects."

As stated above, in regard to the rejection of claims 1 and 3 as being unpatentable over Chan in view of Chapman, the applicants respectfully submit that claim 1, as amended and from which claims 3 and 4 directly or indirectly depend, does not function in the manner of Chan, Chapman, or a combination of Chan and Chapman. Consequently, the applicants respectfully submit that claims 3 and 4 do not function in the manner of Chan, Chapman, and Turnbull, or any combination of Chan, Chapman, or Turnbull.

The applicants find that Turnbull is directed to a white-light LED illuminator for forming "effective white illumination" by using LEDs having different hues such as blue-green and amber, as the applicants have submitted in previous amendments where the Turnbull reference had been cited, and thus does not disclose nor mention the features of amended claim 1.

Thus, Turnbull fails to teach or suggest at least the above-noted features of the subject invention (i.e., that in the first functional mode, the value of the variable determines a color of the illumination light and hence the color of the illumination light does not vary automatically, while in the second functional mode, the color of the illuminating light is changed periodically in

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a predetermined pattern and the value of the variable determines the cycle of the periodic light color change). Therefore, the invention defined by claim 4 under 35 U.S.C. 103(a) is patentable over Chan in view of Chapman as applied to claim 3, and further in view of Turnbull.

The applicants submit that claim 4, along with dependent claim 3, are patentable over Chan in view of Chapman as applied to claim 3 and further in view of Turnbull. Favorable reconsideration of claims 3 and 4 is respectfully requested.

The applicants submit that since the invention defined in independent claims 1 and 10 are not taught by Chan, Chapman, or Turnbull, taken alone or in combination, then claims 3-9 and 11-14, which respectively depend directly or indirectly from claims 1 or 10, and thus contain all of the limitations thereof, are patentable over these references. Accordingly, reconsideration of the rejections of claims 1 and 3-14 are respectfully requested.

CONCLUSION

For all the reasons described in the preceding paragraphs, the applicant respectfully submits that the present application is now in condition for allowance. Accordingly, a timely action to that end is courteously solicited.

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If the Examiner has any remaining questions or concerns, or would prefer claim language different from that included herein, the favor of a telephone call to the applicant's attorneys is requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Donald A. Schurr', written over a horizontal line.

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